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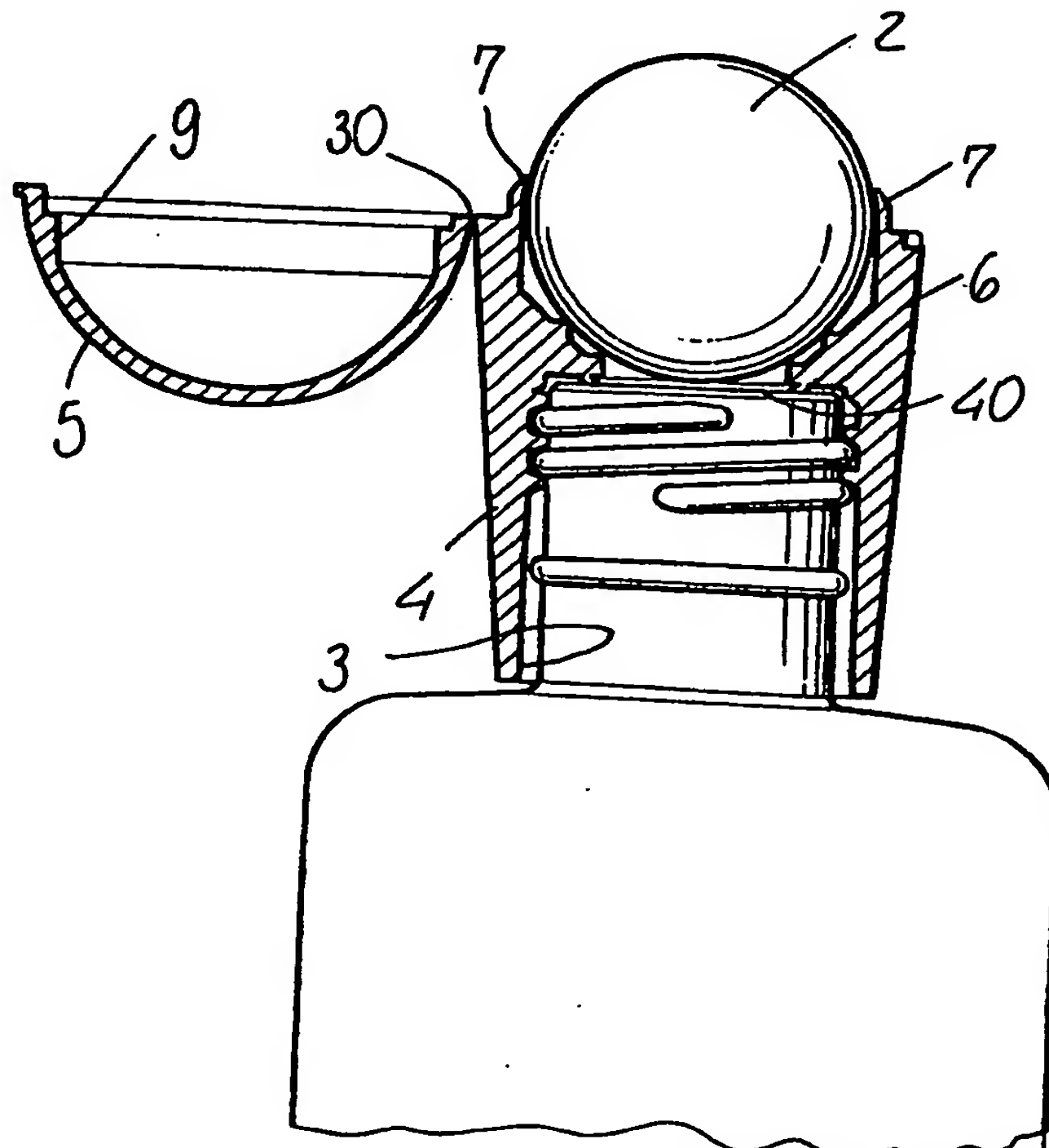
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With international search report.

(54) Title: CAPSULE FOR CONTROLLABLY METERING PRODUCTS HELD IN BOTTLES OR THE LIKE

(57) Abstract

The invention relates to a capsule (1) for controllably metering products held in bottles or the like, comprising a ball element (2) for controllably delivering the product on a delivery surface. The main feature of the invention is that the ball element (2) is housed inside a holding body (6), provided with a cover (5) which can be opened for exposing the top portion of the ball element, as well as with a threaded portion (4) engaging with a corresponding threaded portion provided on the neck (3) of the bottle.



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CAPSULE FOR CONTROLLABLY METERING PRODUCTS HELD IN
BOTTLES OR THE LIKE

BACKGROUND OF THE INVENTION

The present invention relates to a capsule
for controllably metering products held in bottles or
5 the like.

In the cosmetic field, as well as in other
fields in which products must be delivered in metered
amounts on a delivery surface, metering capsules
including in their inside delivery ball elements are
10 already known.

These metering capsule conventionally
comprise a rod element, arranged in the bottle neck,
and a ball element in turn engaged in a mating seat
having a substantially circular rim, and provided on
15 said rod element.

This rod-ball element assembly is protected
by a capsule or cap threaded on the threaded neck of
the bottle.

In particular, the ball element partially
20 projects from the bottle neck and is free of rotating
in its engagement seat, as said ball element contacts
the product application or delivery surface, thereby
gradually delivering said product.

While the above mentioned prior metering
25 capsule allows to controllably deliver or meter the
product, it, on the other hand, has a rather complex
construction, since for making it three different
component elements are required.

In this connection it should be pointed out

that constructional complexity of prior metering capsules negatively affects the operations required for preparing or packaging the bottle, which operations would comprise the filling-in of the bottle with the product, the insertion of the rod element and ball element assembly inside the bottle neck, and the final threading of the capsule or cap on the bottle.

A further problem of prior metering capsules is that, in order to apply said capsules to small size bottles, it is necessary to form special threads, which are different from the corresponding like-size standardized threads, since the inner diameter of the neck of small bottles is not sufficient to receive therein a ball element - rod element assembly.

From the above it should be apparent that it would be actually desirable to provide a metering capsule for controllably metering products held in bottles or the like, allowing to overcome the above mentioned problems.

SUMMARY OF THE INVENTION

Accordingly, the aim of the present invention is to provide such a capsule or cap, including a metering ball element for controllably metering a product, allowing to greatly reduce the making and packaging cost of the bottle the capsule is applied to.

Said aim is achieved by the present invention which specifically relates to a capsule for controllably metering products held in bottles or the like, comprising a ball element designed for

controllably distributing a product on an application surface therefor, characterized in that said ball element is housed inside a holding body, said holding body being provided with a cover which can be opened
5 to expose the top portion of said ball element, and with engagement means for engaging the neck of said bottle.

According to a preferred embodiment of the present invention, the bottle neck engagement means
10 comprise a threaded portion engaging with a corresponding threaded portion provided on said neck of said bottle.

The capsule or cap for controllably metering products held in bottles according to the present invention provides, with respect to the prior
15 art, the following advantages.

Firstly, the capsule or cap according to the present invention is so made to form an integral body, including in its inside said metering ball
20 element, and which can be applied to the bottle without using any rod elements, thereby allowing to reduce the number of component pieces required for making the metering bottle.

Secondly, by using the capsule according to the present invention, the packaging operation for
25 providing a finished product are greatly simplified since, for providing said finished product, it would be merely sufficient to fill-in the bottle with the product and then thread the capsule on the neck of
30 the bottle.

Finally, the specifically designed configuration of the metering capsule according to the present invention will allow to use bottles

having standard threads, thereby greatly reducing the making cost thereof.

BRIEF DESCRIPTION OF THE DRAWINGS

5 Further advantages and characteristics of the present invention will become more apparent from the following disclosure, given by way of an illustrative but not limitative example, with reference to the accompanying drawings, where:

10 Figure 1 is a cross-sectioned view of a metering capsule according to the present invention, as applied to the neck of a bottle, in a closed condition thereof;

15 Figure 2 is a further cross-sectioned view of the metering capsule or cap of Figure 1, applied to the neck of the bottle, in an open condition thereof;

20 Figure 3 is a further cross-sectioned view of a metering capsule according to a further embodiment of the present invention, as applied to the neck of a bottle, in a closed condition thereof; and

25 Figure 4 is yet another cross-sectioned view of the metering capsule of Figure 3, as applied to the neck of the bottle, in an opened condition thereof.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

30 In the following disclosure, reference will be made to some preferred embodiments of the present invention, given by way of a not limitative example of several possible variations of the invention.

A first exemplary embodiment of the capsule

for controllably metering products held in bottles or the like, according to the present invention, generally indicated by the reference number 1, comprises a ball element 2 designed for controllably metering or delivering the products on an application or delivery surface thereof.

As shown, said ball element 2 is housed inside a holding body 6, which is provided with a cover 5, having a substantially semispherical configuration and which can be opened to expose the top portion of the ball element 2.

Preferably, the cover 5 can be opened by causing it to turn with respect to a hinge 30, and it, in a closure condition thereof, will engage, in a fixed-joint relationship, by a portion 9 thereof, with the top holding ring 7.

As shown, the mentioned holding body 6 comprises said top holding ring 7 as well as a bottom holding ring 60, the latter being adapted to support or bear thereon said ball element 2.

The bottom holding ring 60, in particular, is arranged on the top of the edge or rim 40 of the neck 3 of the bottle.

Thus, the ball element 2 will be also housed on the top of the rim or edge 40 of the bottle neck 3.

The holding body 6 is so arranged or constructed to define a space 8 for allowing the product being delivered to pass therethrough, in a controlled manner, by rotatively driving the ball element 2.

Moreover, said holding body 6 is provided with a threaded portion 4 engaging with a

corresponding threaded portion provided on the bottle neck 3.

5 A second exemplary embodiment of the capsule or cap according to the present invention is shown in Figures 3 and 4 and is herein generally indicated by the reference number 20.

10 In this embodiment, the ball element 2 is housed on the top of the rim 40 of the bottle neck 3, inside a holding body 26, provided with a top holding ring 27 as well as with a bottom holding ring 60.

The holding body 26 is so arranged as to define therein a space 28 for allowing the product to be metered to pass therethrough, in a controlled manner, by rotatively driving the ball element 2.

15 The cover 25, which can be brought to an open condition by causing it to turn about the hinge 30, has a substantially spherical cap configuration and comprises engagement portions 29 for engaging the top holding ring 27 of the ball element 2.

20 The capsule according to the present invention operates as follows:

25 More specifically, the capsule or cap is threaded or screwed on the bottle neck 3 by using the threaded portion 4, after having filled-in the bottle with the product.

30 Thus, said capsule will form an integral body, including in its inside the ball element 2 for controllably delivering or metering the product; said integral or single body can be associated to the bottle in a very simple manner.

In order to use the product, it will be sufficient to open the cover of the capsule by causing it to turn about the hinge 30, thereby

exposing the top surface of the ball element 2.

Thus, the product will be metered, according to a per se known method, by causing the ball element 2 to slide on the product application surface.

CLAIMS

1. A capsule for controllably metering products held in bottles or the like, comprising a ball element designed for controllably distributing a product on an application surface therefor, characterized in that said ball element is housed inside a holding body, said holding body being provided with a cover which can be opened to expose the top portion of said ball element, and with engagement means for engaging the neck of said bottle.

2. A capsule for controllably metering products held in bottles or the like, according to Claim 1, characterized in that said holding body houses therein said ball element on the top of the rim of the bottle neck.

3. A capsule for controllably metering products held in bottles or the like, according to Claim 2, characterized in that said holding body comprises at least a top holding ring and at least a bottom holding ring for said ball element, said bottom holding ring being arranged on the top of said bottle neck.

4. A capsule for controllably metering products held in bottles or the like, according to one or more of the preceding claims, characterized in that said cover can be opened by causing it to turn about a hinge.

5. A capsule for controllably metering products held in bottles or the like, according to one or more of the preceding claims, characterized in

that said bottle neck engagement means comprise a threaded portion engaging with the corresponding threaded portion provided on said bottle neck.

1/3

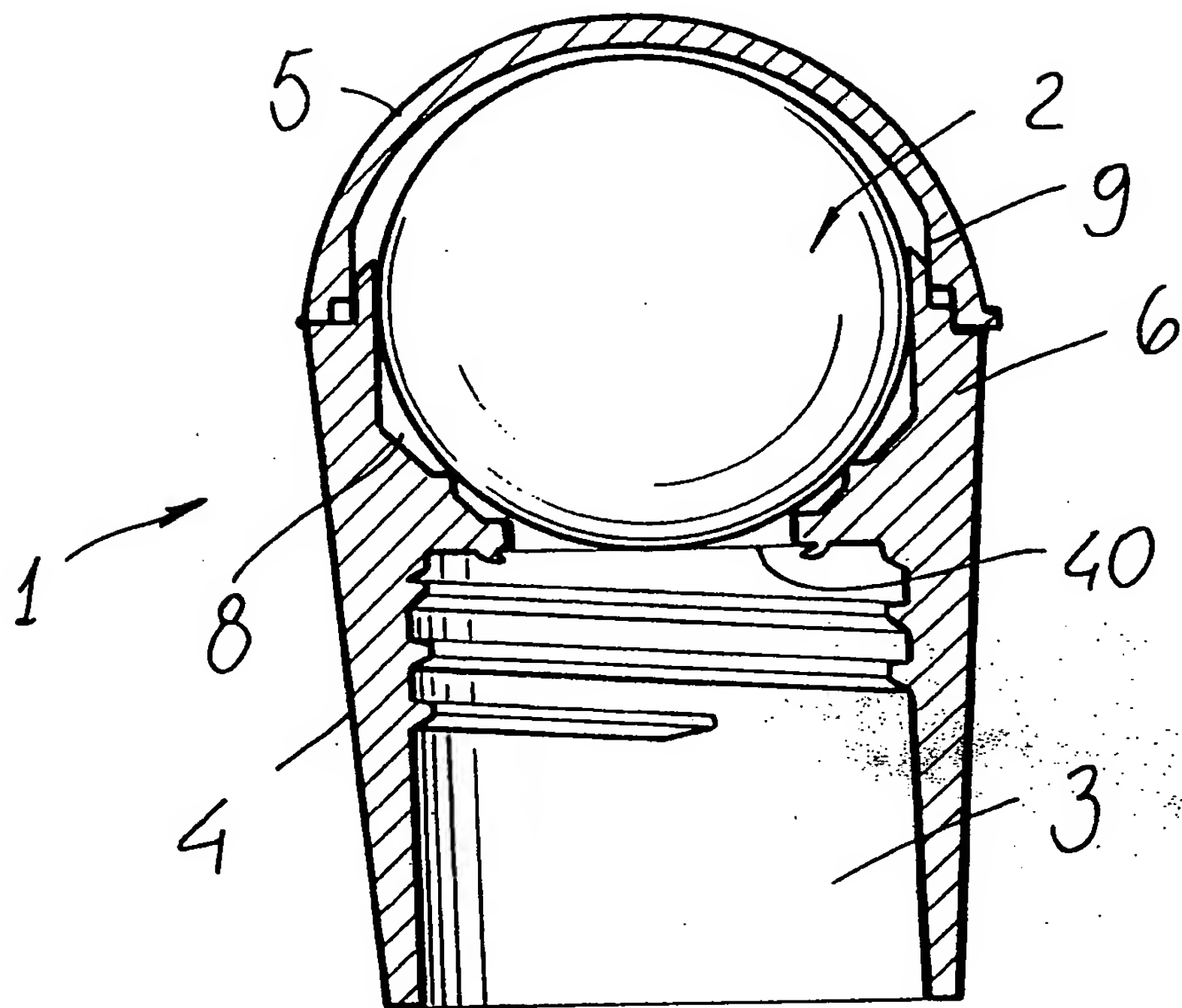


FIG. 1

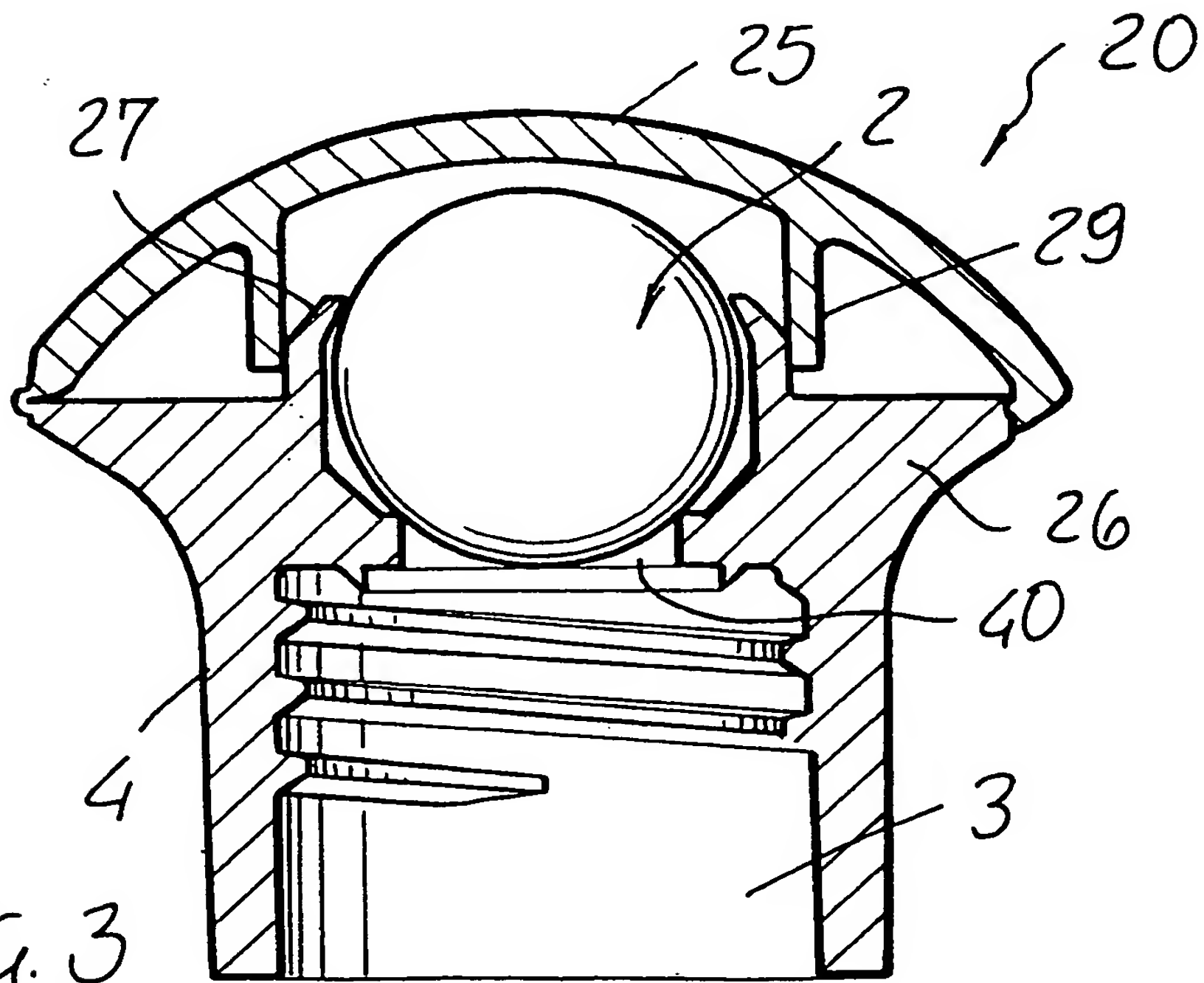


FIG. 3

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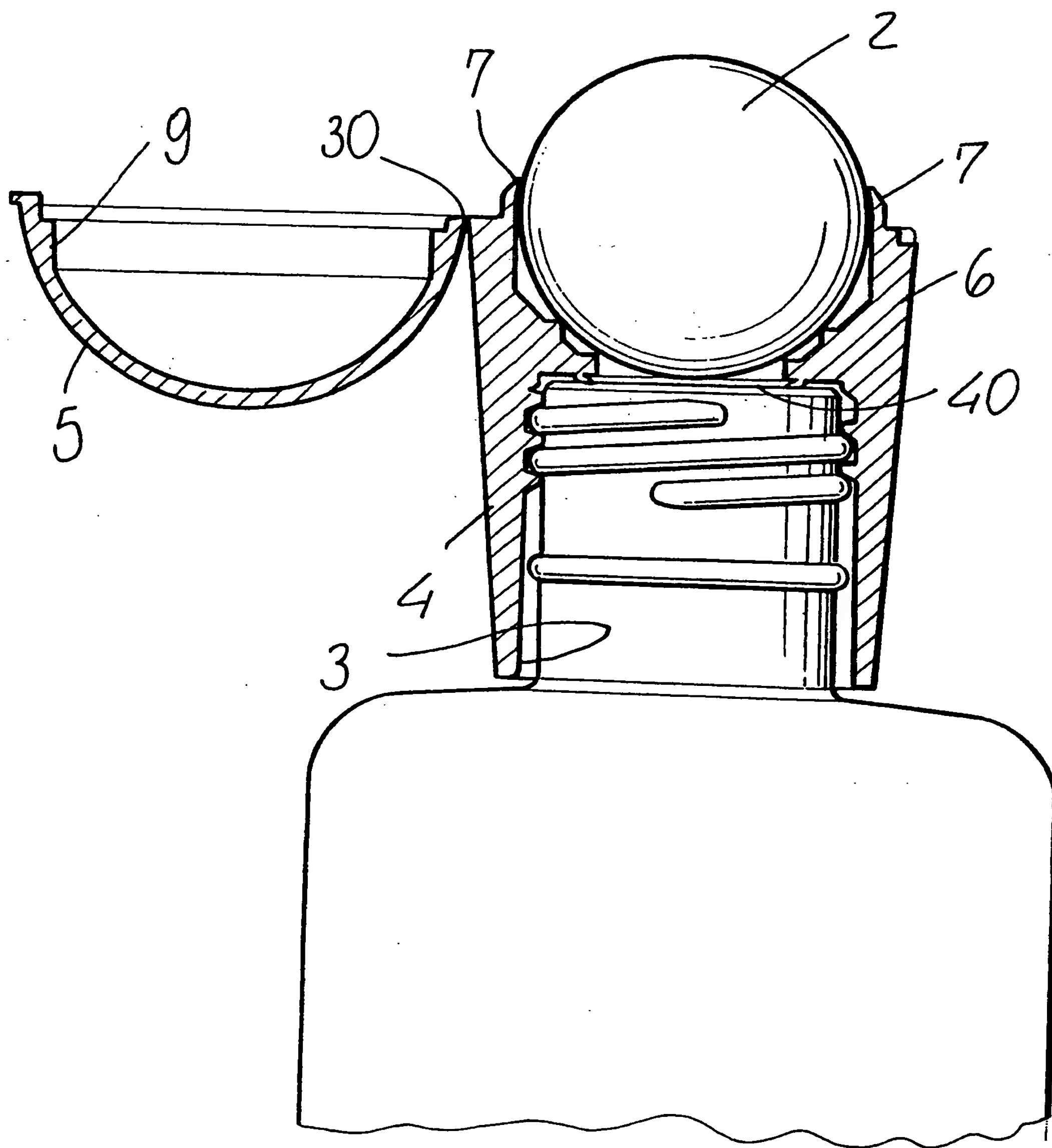
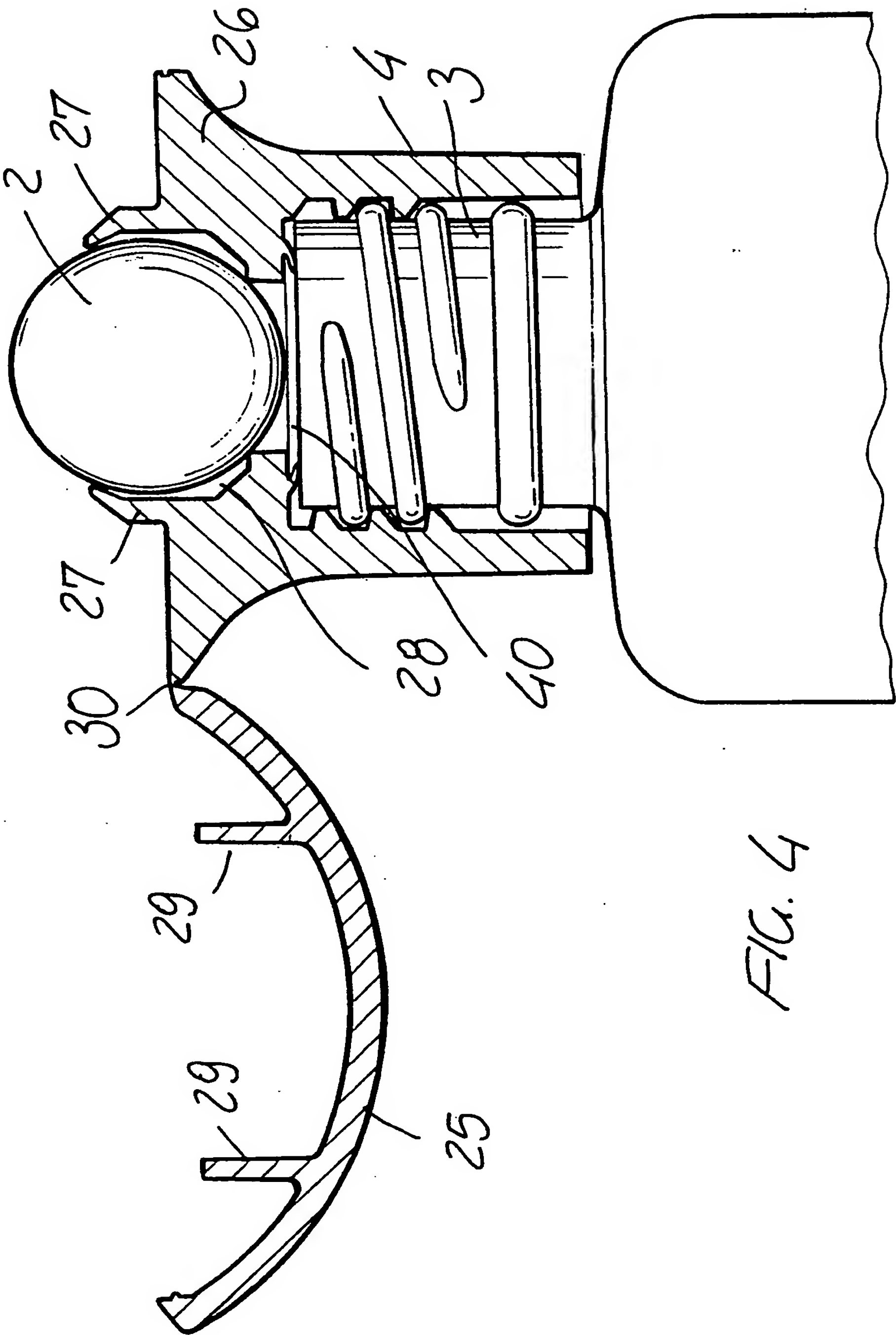


FIG. 2

3/3



INTERNATIONAL SEARCH REPORT

Inte. onal Application No

PCT/IT 98/00201

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A45D34/04

According to International Patent Classification(IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 A45D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 103 691 A (STULL) 17 September 1963 see the whole document	1,4
A	---	2,3
X	US 2 719 997 A (ACKERMAN) 11 October 1955 see the whole document	1,5
A	---	
A	FR 2 623 476 A (L'OREAL) 26 May 1989 see figures 1,2	1,4,5
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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15 October 1998

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26/10/1998

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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Information on patent family members

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